

A MANUAL

-OF-

PRIMARY \* LESSONS

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Jane F. Butrick,

STATE NORMAL AND TRAINING SCHOOL,  
POTSDAM, N. Y.

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# PREFACE.

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The lessons and suggestions contained in these pages are the result of experience in the school-room, and are offered in the hope that they may prove useful to other primary teachers. The aim in presenting these is to give, in the simplest possible language, plain directions and suggestions for a few lessons upon various common topics, hoping that the pleasure and profit derived may serve as an inducement to more extended work. The practicability of these lessons has been tested by daily use in both graded and ungraded schools. Lessons on time, place, plants, animals and the human body are omitted, as these naturally fall under other heads in the regular order of work. The miscellaneous lessons here mentioned are of practical value in arousing and stimulating interest in the general work of the school, affording an agreeable variety to the regular routine, directing thought into new channels, enlarging the experience, increasing knowledge and tending to bring the pupil into greater sympathy and harmony with his work.

An experience of many years in teaching primary reading has led to the adoption of the word-sentence system, with the phonic as an aid. This combination has been thoroughly tested and has met with marked success. The mode of presentation followed facilitates intelligent reading by clearing away the difficulties encountered in the form of unfamiliar words with their meanings, leaving the mind free to follow the thought. Attention is specially directed to supplementary reading, the value of which cannot be too strongly emphasized.

This Manual is specially designed to meet the needs of those who are just entering upon the work of teaching young children, and it is hoped that all such may be in some degree benefited by the directions and suggestions here offered.

My sincere thanks are due to those who have so kindly given helpful suggestions.

J. F. B.

POTSDAM, May 3, 1893.



## PRIMARY READING.

In the following notes on primary reading, the word-sentence system is employed, with the phonic as an aid. While there is a practical application of clearly established psychological principles, the use of technical terms is avoided.

The aim is to present, in the simplest possible language, plain, concise directions for teaching primary reading in such a manner as to obtain the best results.

The importance of supplementary reading is emphasized, and a list of books designed for that purpose and specially adapted to first, second and third reader grades is added.

### FIRST YEAR.

Work to be accomplished during the first quarter (ten weeks.)

The first eighteen pages of the first reader regularly used, with supplementary work in other first readers, or in books specially adapted to this grade.

SYSTEM: The Word-Sentence, with the Phonic as an aid.

Begin with words, teaching from fifteen to twenty, or even more, before forming them into sentences. During this time, teach, either incidentally or directly, the names of many of the letters. Require the pupils to write the words, and while giving assistance and direction, speak the names of the letters in the word he is required to trace or copy. e. g. "Make the *a* as high as the *m*," etc. For reference purposes, write the letters of the alphabet, in their proper order, at the top of the black board.

The first words should consist of names of familiar objects or animals. Next use these words with *a*, pronouncing it smoothly with the word following, as, "a mat," not allowing pupils to give it the long sound of *a* or the short sound of *u*. After this combination is learned, teach, in a similar manner, the word *the* in connection with the same words. Do not allow the *e* to be sounded like short *u*, neither give it the long sound, except before a word beginning with a vowel or vowel sound. Follow with the simple words found on the chart and first pages of the reader or readers in use.

Give words as rapidly as pupils are able to recognize them in both the script and printed forms. Tracing and copying these words, at seats, provides profitable "busy work."

Write the words upon the board in a plain, round hand, and the pupils will experience little difficulty in finding the printed form on the chart or in their books. Use the chart first. If no chart is provided, one can easily be made from manilla paper. This "home-made" chart is more easily managed, if each sheet is made into four leaves, either using these separately or binding

them together. A chart is invaluable in this grade, and is so easily made that none need do without it. Beginning with the first lesson, let it grow daily as a part of the preparation for each succeeding lesson.

As each new word is presented, require pupils to give a sentence containing it. Should the meaning of the word be unknown to any member of the class, explain clearly before requiring its use in a sentence.

Pay particular attention to distinctness of enunciation. *Insist* upon a clear, distinct utterance of each word. Direct the children how to use the organs of speech in making the sounds with which they have difficulty. Be persistent in efforts to overcome wrong habits of speech.

Ascertain whether any pupils have difficulty in seeing the black-board or hearing the teacher's voice, and so arrange the seating as to place such pupils at the best possible advantage for seeing or hearing. Apparent slowness or dullness may sometimes be traced to one or both of these causes.

For the first word, select the name of an object or animal about which the pupils can be induced to talk freely, by showing them a picture of the same, or the object itself. Write the name upon the board, putting the object or picture out of sight. Write the word many times, each time calling upon some pupil to pronounce it. As far as possible, avoid concert recitation.

### Suggestions for Drill in the Recognition of Words. Blackboard Exercise.

1. Write words upon the board, calling upon members of the class to name them. Work as rapidly as possible, in order to keep attention. At the very first, have but one word upon the board at a time, that the impression may be clear and distinct.

2. Write words in columns, calling upon members of the class to pronounce, as fast as written.

3. Using these lists, call upon a pupil to point out one word as many times as it occurs, e. g. "Point out the word *dog*, as many times as you can find it." In a similar manner, call upon the pupils to point out other words, pronouncing, each time.

4. Using the same lists, call upon different pupils to name the words, one beginning at the first word and naming from the top downward, another naming the last word and pronouncing from the bottom of the list upward. Write new columns after three or four have done as suggested, changing the order of the words, to prevent the memorizing of the lists.

5. Write words upon the board, promiscuously, calling for certain words, as indicated in 3, then for all the words, as in 4.

6. Write lists of words, call upon a pupil to point out and name some word he knows, call upon another to select the same word elsewhere in the columns, each time naming the word.

7. Similar exercise with words written promiscuously upon the board.

NOTE. When from a similarity of some of its parts, one word is mistaken for another, as *log*, for *dog*, write both words upon the board, one above the other, and compare them, letter by letter.



### Chart Exercise.

1. Write a word upon the board, call upon a pupil to name it, and to find it on the chart as many times as it occurs, in both script and print. Allow the pupils to point to and name the word as soon as discovered.

2. Write a word upon the board, call upon a pupil to give its name and to find it upon the chart as many times as it occurs. *After he has found all he can*, let other pupils point to any that he may have omitted. Do not allow pupils to interrupt each other when reciting.

3. Let one pupil point to and name a word, another find one like it, pronouncing as he points to it.

4. Call upon one pupil to point to all the words he recognizes upon one page of the chart, a second upon another page, and so on. Hold the class responsible for correction of mistakes and for omissions.

5. Turn the pages of the chart and allow any member of the class to point to and name any word he recognizes.

NOTE. Call most frequently upon the slow and timid pupils, while defrauding none of a due share of attention.

### Exercise with Books.

When circumstances demand the immediate use of books, or when, in the judgment of the teacher, the time for their use has arrived, the following exercise will be found profitable.

1. Write a word upon the board, call for its pronunciation, then direct pupils to find it as many times as it occurs upon the page or portion of the page indicated. When the pupils think they have done so, call upon them in this manner, "How many times did Anna find the word?" "Three times." Several do not agree with Anna. "Mary?" "Four times." Perhaps John has found it some other number of times. So they are directed to look again. This is to insure careful and independent work.

If some one still insists upon having found the word a greater number of times than it really occurs, ask him to point them out for you, when it will be found that some word similar in form is mistaken for the correct one. This gives an opportunity for comparing the two and impressing the correct form.

2. Beginning with the first line, pronounce the words from right to left.

This supposes the previous preparation of all the words in the portion thus pronounced.

NOTE. As no thought is obtained by pronouncing the words of a sentence or paragraph in their reverse order, it is obviously erroneous to call this exercise "*reading backward*."

### Exercise in Tracing and Writing the Words of the Reading Lesson.

This exercise provides for "busy work" and should be commenced at once. Give timid pupils special assistance and encouragement, guiding the hand, if necessary.

1. Assign the pupils special places at the board and in each allotted portion

write the word to be written or traced by the pupils. Each time the word is written, call upon some one to name it, thus holding the attention and calling upon each for its pronunciation. Pupils *trace* the word. It will be necessary to re-write the word many times on account of the inability of pupils to follow the lines accurately until the hand has more training. Do not allow a word to be traced after it loses its distinctness of outline.

In giving assistance, mention the names of the letters; thus "Make the *e* as high as the *m*" etc. One word is sufficient for the first attempt. Do not keep pupils at the board until they are fatigued. For "busy work" write the same word several times, upon their slates or papers, directing them to see how accurately they can trace it. Commend neatness of work.

2. *Copy* the word previously traced, the teacher assisting, encouraging, and if necessary guiding the hands of pupils. Leave the word upon the board to be copied by the pupils at their seats.

3. Dictate the word for pupils to write upon the board. Then spell orally, each pupil noticing the correctness of his own work. Commend neatness and honest effort.

Work as rapidly as is consistent with accuracy, gradually training the slow pupils to greater quickness. Do not say "quickly," or "hurry," or work with nervous haste, which is so disconcerting to children, but with a controlled energy, stimulating to the pupils.

The use of signals will be found helpful in securing an orderly passing to and from the board, as well as promptness and uniformity of work.

### Introduction of Sentences.

The sentences first given should be short and simple that the thought may be easily gained. Insist upon correct expression from the very first.

If the first sentence is "I see a man," recall the words by writing them singly upon the board, erasing as each is recognized. Now write the words, "*I see*," have a pupil read them, then add the words "*a man*," place the period and have the sentence read. The pupils should *read* the sentences written upon the board, looking at each word, not *recite* it while looking at the teacher or around the room.

At first, to secure undivided attention, have but one sentence upon the board.

If it becomes necessary to read a sentence for pupils in order to show what is meant by reading it so as to give the thought, or *meaning*, as they express it, be careful to read as slowly and distinctly as you wish *them* to do.

When a sentence has been read once, write another for the next one called upon, then another, and another. If one pupil does not give good expression, do not call upon a second to read the same, as the faults of the first will be emphasized by the one following. Children are very imitative. The child should not be asked to look away from the board, or, if the book is in use, to close the book and *tell* it to you. Perhaps he does not get the thought, or he may have an unnatural tone from nervous strain. Find out whether he under

stands what he is trying to read, then, if the tone does not improve, ask him to "use his talking voice," making your meaning plain by requesting him to tell you that "the sun shines," "the wind blows," or whatever simple sentence may come to mind.

After a little practice in reading sentences from the board, use the chart freely, and, very soon, the book, that there may be equal readiness in reading both script and print.

### Reading from Books.

In the drill for the recognition of words, pupils have used their books in the pronouncing exercises and in selecting certain words from a page or portion of a page. The words found upon several pages are now prepared and pupils are ready to read. In order to be sure that every word is thoroughly familiar, call upon the one who is to read, to first pronounce the paragraph assigned, from right to left, beginning with the first line. As this is done for the sake of leaving the mind free to give attention to the thought, it follows that the pupil who has pronounced a paragraph in this way should be the one to read it. If pupils can read without pronouncing in this way, by all means allow them to do it. Do no unnecessary work. Finish all the pages prepared, then if obtainable, introduce another set of first readers containing the same words, with, perhaps, a few new ones, thus at the same time, fixing more firmly what has been learned and giving variety by new combinations. If possible, have several sets of first readers at hand. This additional reading matter should be placed in the hands of the children only when needed for this purpose that it may not lose its interest and freshness. The benefit of this continued recognition of familiar words in new relations can hardly be overestimated.

### Preparing Reading. Phonic Aid.

As soon as practicable, have the preparation of the reading lessons and the reading proper done at separate periods of the day.

1. Review and test. Write a word, erase quickly, call upon a pupil to spell, and, if not a monosyllable, syllabicate and indicate the accented syllable by naming the mark of accent at the proper place in the word. As this exercise is not only for test and review, but aims at promoting good spelling by training pupils to see all the letters in a word at a single glance, do not pronounce the word before spelling it. Spend from three to five minutes in this way. For the convenience of the teacher, the words may be written upon a slip of paper just wide enough to place upon the back of an eraser held in the left hand.

Occasionally write an unknown word to test the genuineness of the pupil's work in recognizing the letters in succession, instead of thinking first of the word.

2. Presenting new words with phonic aid.

Suppose the new word is *may*. Give the *a* its proper diacritical mark, and draw a short oblique line through the *y*. The letters are already known. Ask a pupil to speak the letter *m*, prolong it and notice the sound made after clos-

ing the lips. Call upon each one to make this sound. Point to *a*. Let the pupil give its name. Call attention to the diacritical mark, tell the class that when the letter *a* is so marked it has its name sound (or long sound, if preferred,) and have each pupil give the sound. Call attention to *y* and teach them that when a letter is marked in this way it has no sound, or is silent. Return to the sounds of *m* and *a*, directing, and if they do not succeed, showing them how to utter the sounds in succession, not separated, but in a smooth gliding manner, until it is discovered that the word is *may*. Many of the sounds must be given outright for pupils to imitate, and great care should be exercised in teaching them. No special phonic drill need be given, but give the sounds when needed, have pupils imitate and help them in the formation of words, as suggested in the word *may*. It is many times better to give new words by sight, but use sounds as aids, continually. Much time spent in phonic drill seems unprofitable, as the sounds may be learned with as little conscious effort and expenditure of time as are the letters of the alphabet. For some of the more difficult sounds, type words may be employed; e. g., use *air* as the type word for the sound of a heard in that word; ask, her, there, sir, or, etc., serve as type words. Teach the correct pronunciation, and refer to them as guides to the pronunciation of words containing these sounds.

3. As soon as the new word is known, have it used in a sentence. To obtain a clear mental picture of the word, have pupils look at it intently, turn their heads or close their eyes and try to think how it looks. Verify by looking at the word. If wrong, try again. Call upon a pupil to spell the word orally, without looking at it, other pupils listening and comparing with the word upon the board. Another pupil write it upon the board, those at seats comparing it with the one written by the teacher. If the child can not write it correctly, let him copy it several times, then erase and write again, another pupil, meanwhile, being sent to write the same, while those at seats compare as before. Now send all to write the word, not erasing that written by the teacher until they can write it without help. Then erase all words and write from dictation.

4. Find the new word upon the chart and in their books. (This may be done before writing it, if preferred.)

Teach another word in a similar manner. After pupils have written this last one correctly, dictate the first word learned, as a test of their recollection. Do not keep children at the board until they become tired. Better send them oftener.

6. When all the words in a certain paragraph or lesson are prepared, have it pronounced from right to left, beginning at the first line.

### Use of the Reader.

While reading, insist upon an erect posture and correct holding of the book. Insist, also, upon natural tones and good expression. If the lesson is so thoroughly prepared that there need be no hesitation over words, in regard to either form or meaning, the expression, unless in exceptional cases, will take care of itself.

While the pupil is reading, allow no interruptions. It is better to hold the class responsible for the intelligent expression of the thought than to have their minds so occupied in remembering some omission or mispronunciation of a word, as to be unable to pay further attention to what is read. The important thing for those listening is to be able to obtain the meaning of what is read. Such reading is to be commended, though small mistakes occur.

To guard against carelessness, write the mispronounced word upon the board and have the reader pronounce it correctly. If words are omitted, require the pupil to re-read the paragraph or sentence in which the omission occurred. The direction, "*Look at the words and think of the meaning of what you are reading,*" is useful.

Do not keep children reading the same sentences over and over until they lose interest. When the lesson prepared is finished, either turn back to something previously read, or have in readiness other books with the same grade of words. Do not allow the work to become monotonous.

### Work of Second Quarter.

Finish from 35 to 40 pages of the first reader regularly in use, with considerable reading from other first readers, as many as can be obtained.

The mode of conducting the preparation and reading is the same as that given for the latter part of the first quarter, with such modifications as the progress of the class may demand.

### Second Term. First Year, Third and Fourth Quarters.

Finish the first reader, with supplementary reading in other first readers or in reading matter adapted to this grade. The thorough *preparation* of a lesson requires more time than the reading. Devote the intervening time to supplementary reading.

### Supplementary Reading.

1. Make a careful selection of reading matter adapted to the needs of the class. Call attention to unfamiliar words by placing them upon the board, marking if necessary, and obtaining their pronunciation and meaning. If there are lists of words at the head of the lesson, have them pronounced by several members of the class, varying the order; thus, begin with the first word of the first column and pronounce each column downward; begin with the last word of the first column and pronounce each column from the last word toward the top; begin at the first word and pronounce across the page, etc. As soon as the words are sufficiently familiar, read, at sight.

This may seem difficult, but the aim in teaching this subject is, first, to cultivate ability to gain the thought of what is read, for one's own profit or pleasure, which may be done by silent reading; secondly, to express the thought of the author intelligently, by reading aloud from the printed page, for the pleasure or profit of others, which calls for oral reading. The ability to read intelligently at sight is of great value. Keep this in view from the first.

Allow no interruptions from the members of the class. If the reader fails to get the thought, ascertain where the difficulty lies. If it is in the meaning



of a word, perhaps used in some connection new to him, have it explained; if in the construction of a sentence, a question or two will make it clear. Or, allow him to study out the meaning of the passage while another reads. Do not tell him or let others tell him what he can find out by a little study. A lesson in which there are no difficulties to overcome, fails of its highest interest, as well as of its greatest benefit to the pupils.

2. Direct the pupils to look through the list of words at the head of the lesson, reporting all unfamiliar words. Write the unfamiliar word upon the board, with its diacritical marks. If the pupils can not make it out, help them; or, have the pupil spell the word and without representing it upon the board, give him the sound of the letter or letters which will enable him to pronounce the word; or have the word spelled, then say to him, "The mark for the *a* is the breve," or give the direction for whatever sound or sounds it may be necessary for him to know in order to pronounce the word. Call upon several to pronounce the words in the columns, then read the selections.

3. Prepare, as directed in 1, or in 2. Direct pupils to study whatever portion of the lesson there will be time to read, then have it read.

4. Prepare unfamiliar words, then direct pupils to study, afterward calling upon them to relate what they have read.

5. Prepare unfamiliar words and have one pupil read while others listen, without looking upon their books. As but one book is necessary, only one need be given out, if preferred.

## SECOND YEAR.

Begin the second reader, and so plan the work for the year as to finish the reader regularly in use, with as much supplementary reading as can be accomplished, introducing it as directed in the work of the first year. In addition to other second readers, which may be used to advantage, many books specially prepared for this purpose are now published.

Proceed with the preparation and reading in the same general manner as in the first year, throwing the pupil more and more upon his own responsibility, as he gains in the power to help himself.

### Preparation.

1. Review and test. Work rapidly. See 1, under preparation first year.

2. Exercise in diacritical marking. Write a word upon the board, call upon a pupil to pronounce and mark it. (Of course it should be one which they have been instructed how to mark, at some previous time.) Pupils at seats decide upon the correctness of the work. Two or three pupils may go to the board, at one time, to mark the same or different words.

Give only a few minutes to exercises 1 and 2.

3. Present new words as in 2, 3, 4, 5, and 6, under preparation, first year. Vary or modify to suit the needs of the class. When the new words are not too difficult, more than one may be given before sending pupils to the board for the written spelling.

Each day, in connection with the work in advance, dictate words previously learned, by this means securing constant review.

If the time allotted to the preparation is short, write the words upon the board, teaching the pronunciation, syllabication, accented syllable, and the meaning of each, as fast as it is written, and have pupils copy for study at their seats; but the written work at the board will be found profitable after the study at seats.

### **Use of Readers and Supplementary Reading.**

Follow the same general plan as in the work of the first year, varying and modifying as the growth of the class demands.

Under "Introduction of Sentences," "Reading from books," and "Use of the reader," in the first term of the first year, and "Supplementary reading," in the second term, are directions and cautions which apply equally to the work of the second year.

## **THIRD YEAR.**

Begin the third reader, or, if that is not considered advisable, select from one of the many excellent books now published which are designed to supplement the regular school readers, one adapted to the requirements of the class.

Prepare all new words by teaching their meaning and correct spelling.

The directions for preparation of lessons may still be followed, as far as they will apply. Teach the pronunciation, syllabication, accented syllable and meaning of words, after which they may be studied and written as directed in preparation for the second year.

Give a written test, on paper, once each week. No word should be considered mastered until it can be written without mistake.

Vary the work of spelling by introducing various exercises, such as making a list of words in which the sound of the vowel is changed by the addition of silent *e*; e. g. tin, tine, hop, hope, etc.; finding and spelling words pronounced alike, but spelled differently, e, g., right, wright, Wright, write, rite; sell, cell, etc.; spelling by analogy; e. g. bin, din, fin, gin, kin, pin, spin, sin, tin, win; also the plural of such words as pony, lady, loaf, thief; mouthful, spoonful, sheep, mouse, deer, etc.; the doubling of the final consonant before adding *ing* or *ed*, in such words as fit, hop, spin, begin, etc. Finding synonyms is a source of interest and profit. Another exercise very interesting to children, consists of writing letters promiscuously upon the board and calling upon a pupil to spell a word by pointing out, in their proper order, the letters composing it, those at their seats following the spelling and pronouncing the word.

A good exercise for "busy work" consists in placing several letters upon the board and asking pupils to make a list of the words that can be formed by using any two or more of them. Each pupil is anxious to have the longest list. If the third reader is not used during the first term, it can be introduced in the latter half of the year. The pupils ought to do much supplementary reading during the third year. They should be able to read intelligently and

well, if proper attention has been given to avoiding the formation of such habits as the use of unnatural pitch and tone, drawling, sing-song, monotone, too many falling inflections, etc., through thorough preparation, as indicated in the foregoing pages, and the use of interesting reading matter in addition to the regular readers in use.

### **SUPPLEMENTARY READING—First Reader Grade.**

The Graded Supplementary Reader, First Grade.—Prof. Tweed: Lee and Shepard, Boston. This reader is also published in parts, brown paper covers.

Nature Stories for Young Readers.—M. Florence Bass: D. C. Heath & Co., Boston.

Nature Readers, Seaside and Wayside, No. 1.—J. McNair Wright: D. C. Heath & Co., Boston.

The Children's Primer.—Ellen M. Cyr: Ginn & Co., Boston.

The Riverside Primer and Reader. Houghton, Mifflin & Co., Boston and New York.

### **Second Reader Grade.**

The Graded Supplementary Reader.—By Prof. Tweed: Lee and Shepard, Boston. This reader is also published in parts, brown paper cover.

Nature Readers, Seaside and Wayside, No. 2.—J. McNair Wright: D. C. Heath & Co., Boston.

Fables and Folk Stories.—By Horace E. Scudder: Houghton, Mifflin & Co., Boston and New York.

Two Fairy Tale Books and other Stories.—Longmans, Green and Co., New York.

Easy Steps for Little Feet.—American Book Co., New York.

Æsop's Fables, Vol. 1.—Educational Pub. Co., Boston.

In paper form, Our Little People, (Monthly) published by D. H. Knowlton & Co., Farmington, Me.; and in magazine form, Our Little Men and Women, (monthly) D. Lothrop Co., and Our Little Ones, and The Nursery, (monthly) The Russell Pub. Co., Boston, contain bright, entertaining reading matter, adapted to the second reader grade.

### **Third Reader Grade.**

Golden Book of Choice Reading.—American Book Co., New York.

The Graded Supplementary Reader.—Prof. Tweed: Lee and Shepard, Boston. This reader is also published in parts, brown paper covers.

Stories in American History.—N. S. Dodge: Lee and Shepard, Boston.

Nature Readers, Seaside and Wayside, No. 3.—J. McNair Wright: D. C. Heath, Boston.

Classics for Children.—Anderson's Fairy Tales, First Series. Stickney: Ginn & Co., Boston.

Fairy Tale Books.—The History of Whittington and Other Stories: Longmans, Green & Co., New York.

Grimm's Fairy Tales.—Educational Publishing Co., Boston.

School Days, a monthly paper published by D. H. Knowlton, Farmington,



Me. The Water Lily, a temperance monthly published by the National Temperance Society, 58 Reade St., New York, and Pansy, D. Lothrop & Co., furnish interesting reading matter for this grade.

Above the third reader grade are many excellent books for supplementary reading. Among these are Seaside and Wayside, No. 3, which also contains matter adapted to science work in the first, second and third reader grades. Nos. 1 and 2 also contain matter adapted to science work in the third reader grade, while No. 4 is adapted to intermediate grades.

Leaves from Nature's Story-Book, in three numbers, by Mrs. M. A. B. Kelly, published by the Educational Publishing Co., Boston, will accompany and follow the third reader grade. Following the third reader grade, we find among Classics for Children, published by Ginn and Co., Kingsley's Water-Babies, Martineau's Peasant and Prince, and others more advanced.

For fourth reader grade, we find Young Folks' Robinson Crusoe, Six Stories from the Arabian Nights and The Picturesque Geographical Reader, published by Lee and Shepard. Still more advanced are the English Classics for School Reading, in six numbers, consisting of Fairy Tales, Tales of Chivalry, Tales of Scottish and English History, and Tales from Shakespeare's Comedies and Tragedies, published by Harper & Brothers, New York. Stories of Industry, in two numbers, published by the Educational Publishing Co., Boston, contain much that is both interesting and instructive.

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## SPELLING.

Spelling is an aid to reading, and should be commenced at the same time. As correct spelling is chiefly valuable in written composition, it follows that written spelling should receive a greater share of attention than oral spelling.

### Suggestions for Written Spelling.

#### PREPARATION OF LESSON.

Below the third reader grade, the spelling should be made a direct aid to reading by taking the spelling lessons from the reader, keeping just in advance of the reading lesson. This is profitable even in a higher grade. Whether the spelling lessons are taken from the reader or the speller, prepare them carefully before requiring their study by the pupils. The following directions are designed for the third reader grade, but will apply to other grades.

If the lesson is taken from the reader, write the words upon the board properly syllabicated, mark the accented syllable, capitalize when necessary, also use whatever other mark may be necessary to the correct spelling, as hyphen or apostrophe. Call attention to any peculiarity or difficult combination of letters. Have each word pronounced correctly, and, if necessary, defined or used in a sentence. The pupils may then copy for further study.

If the speller is used, pronounce and explain, as previously suggested. In the further preparation, direct the pupil to look intently at the word in order

to get a correct impression, remove the eyes from the page or cover the word, recall the mental picture, verify by again looking at the word, then write it and compare with the printed word. Studying a lesson once, in this thorough manner, ought to give a mastery of it.

### Spelling Exercise, using Paper or Spelling Blanks.

Pupils write their names neatly at the head of their papers and number each word, as written. Pronounce the words distinctly and naturally, not giving undue prominence to the syllables composing it. As a rule, pronounce a word but once; *expect* attention and allow just sufficient time for the writing. Give no time for inattention. As soon as the last word is spelled, promptly collect the papers or spelling blanks. Make a list of the words misspelled and write them, correctly spelled, upon the board for the pupils to copy in a book kept for that purpose. Do not place the incorrect form before them, even for the purpose of correction. Give a certain number of these in connection with the following lesson. It is a good plan to give a number of review words in connection with the advance lesson, each day. The length of the lesson should depend upon its difficulty. If the speller is adapted to the grade, and the words have been prepared by the teacher, as suggested, ten words in advance, some of which would probably be familiar, would not be too many. Add to these, words from the list of misspelled words from previous lessons and review words, making in all twenty. This is not too difficult for an average class. The lesson should not be so difficult as to discourage, nor should it be so easy as to require but little effort. Give a written test once each week.

Slates can be used in a similar manner. Suggestions for blackboard spelling exercise are given in the directions for preparing reading.

By way of variety, give an occasional exercise in oral spelling. An oral review, separating the class into two divisions, equal in ability, may be made both interesting and profitable. In oral spelling, the pupil should be required to pronounce the word both before and after spelling, to syllabicate properly, and to name capital letters, hyphen and apostrophe, when used.

Dictation exercises consisting of sentences containing one or more of the words of the spelling lesson, may also be given.

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### PENMANSHIP.

Aim :—Legibility, Rapidity.

How secured :

a—By gaining perfect control of the muscles of the hand and arm.

b—By a well defined mental picture. These may be secured by special drill in the movement exercises, and by persevering practice in writing from good copies.

Positions.  $\left\{ \begin{array}{l} \text{Front.} \\ \text{Left.} \\ \text{Right.} \\ \text{Right oblique.} \end{array} \right.$

Movements.  $\left\{ \begin{array}{l} \text{Finger.} \\ \text{Forearm.} \\ \text{Whole arm.} \\ \text{Combined.} \end{array} \right.$

Select whichever position is best adapted to the circumstances or conditions under which the class is taught, as light, desks, number of children at each desk, etc.

**Materials.**—Slate and pencil, paper and pencil; pen, ink and paper.

Have a practice book for extra drill or for drill before opening the books.

**General Directions.**—Observe some regular order for opening, proceeding with work and closing, e. g.:

*a*—Give signals for distribution of material.

*b*—Give signals for position.

*c*—Give signals for opening books and taking pencils or pens.

*d*—Drill and execution, teacher criticising and each pupil criticising his own work.

*e*—Close with signals.

### **Kinds of Drill.**

*a*—Pencil holding without movement.

*b*—Movement exercises.

*c*—Drill in slanting and horizontal lines, the teacher counting as pupils execute.

By counting for the pupils, steady attention and uniform rate are secured.

The teacher should make himself acquainted with some system of penmanship.

The following may be of service :

1st group—i, u, w.

2d group—n, m, x, v.

3d group—o, a, e, e.

4th group—r, s.

5th group—t, d, p, q.

6th group—l, b, h, k, f.

7th group—j, g, y, z.

#### *Capitals :*

1.—Direct oval.

2.—Reversed oval.

3.—Capital stem.

### **OBSERVATION LESSONS.—First Year.**

Teach children to be observing, to perceive quickly and accurately. Ask one child of a class to report at the next daily recitation, all he saw in a certain allotted distance, either on the way home or when coming to school. Or ask him to observe some particular objects, as the trees, flowers, houses, fences in a certain distance; or observe one house closely, describing it as it appears from the street, its general form, size, color, number of windows, and doors visible, their size and shape, with or without blinds, veranda, porch, any peculiarity of construction, as shape of roof, chimneys, their size and number, etc. Another child, who passes some shop or store window, describe what was seen in one window, limiting the time, in each case. Another will perhaps notice the birds, their songs, flight, color, whether seeking food or feeding their young, etc. Avoid asking too much of any child at one time. If they have been instructed to hasten home, direct them to look quickly, with-

out pausing. After some experience, direct them to try how much they can perceive in a single glance at a window, tree, house, etc. As the experience is related, quietly and unobtrusively correct any inaccuracies of expression. Make this exercise definite and to the point. Do not allow it to degenerate into mere gossip concerning people or premises, or into talk about themselves in connection with what is described.

For a little different exercise, ask a child to bring with him some little object that attracts his attention, as a twig, blade of grass, bit of stone, a flower from home, etc., for examination. A small magnifying glass is a convenience in making a close examination. Habits of observation, quickness of perception, a command of language and much useful knowledge may be gained from such lessons.

### **Memory and Language Lessons.**

Read or tell a short story, (fables are good) and require its oral reproduction, paying attention to the language employed. After some experience, write the reproduction, as given by one child, upon the board, call upon others for corrections, then read the original story and compare it with the reproduction upon the board. Later, adaptations of fairy tales, folk stories, stories from mythology, also bright, interesting stories from juvenile books or magazines, may be used in a similar manner.

### **Lessons for the Cultivation of Language and for Training the Imagination.**

Hold up a picture containing but few details. The children examine and state what they see, then decide upon a title for the story to be written upon the board. The pupils then compose a story, sentence by sentence, the teacher holding them to some regular order, not allowing them to give one sentence about one thing, a second about something different, etc., but making a smooth, connected story giving needed assistance in forming correct sentences. The sentences are written upon the board as fast as given. The figures in the picture furnish the foundation for the story, the imaginations of the children supplying the details. When the story is finished, it is read by the teacher and the class is given the credit of its production. After some practice, the pictures presented may contain more details. Hold the children closely to clear, definite, concise language. Some children will need to be encouraged to greater freedom of imagination, others will need restraining. Allow no statements of impossibilities. Many children need this training in order to check a too vivid imagination, (phantasy) and to train them to keep their statements within legitimate bounds. Sometimes, each member of the class may be given a small picture, and, after examining it, be allowed to tell a complete story, giving the title and imagining some little incidents concerning what is found in the picture.

**SIZE.****FIRST YEAR.****RELATIVE SIZE.**

**Apparatus.** Blocks, balls, boxes, books, sticks, pencils, strings, strips of paper, ribbons, lines on the board, etc. The objects compared should differ in size, but be of the same kind.

1. Give general idea of size—large, small, larger, smaller, largest, smallest.

2. Consider size in certain directions, as, long, short, longer, shorter, longest, shortest; broad, narrow, broader, narrower, etc.; thick, thin, etc.; deep, shallow, etc.; and any other relative terms that may be considered advisable. Teach long and short first.

Teach comparative before absolute or standard length, because, in order to teach absolute length, it is necessary to have a knowledge of the standard of length—the yard, and compare the given length with the standard. Absolute length, therefore, depends upon relative length.

**SECOND YEAR.****STANDARD OF MEASURE OF LENGTH.**

Before giving the term yard, teach the necessity for a standard of measure, by showing the need of something more definite than long and short.

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**Suggestions for Lessons on the Yard as the Standard  
of Measure of Length.**

1. Show the necessity for more definite terms than long and short. 1. Use these terms when sufficiently definite, as in directing pupils to select long strings, etc. 2. Use the terms when not sufficiently definite, as in asking for a long string—as long as the one held by the teacher. After trial, pupils will see that they must know “how long” the string is, or, in other words, must use it as a *measure*. Now suggest sending a pupil for a ribbon long enough for some special use. If this suggests to them that ribbon is sold by the yard, have them tell what they know about it, select the yard measure and use it in measuring. But if this is not the case, if they suggest taking a string of the desired length, mention several articles of different lengths which are to be purchased at the same time, suggest the possibility of losing the measures or of forgetting which is for the ribbon, etc., and of the inconvenience to both purchaser and dealer. Recall their own experiences in visiting a store, and in seeing articles measured at home.

Teach, in addition, that the yard is always of the same length and that this length is established by law.

After the yard is taught, teach half-yard and quarter-yard. As the different divisions are found, build up the table; e. g., when the pupils state that there are two half-yards in a yard, write this upon the board. Do the same for the quarter yard. The tables, as first written, will stand :



2 half yards make 1 yard.

4 quarter-yards make 1 yard.

2 quarter-yards make 1 half-yard.

Then change to fractional form and teach repetition marks and the abbreviation for yard. The table will then be in this form :

$\frac{2}{2}$  yds.=1 yd.

$\frac{4}{4}$  yds.=1 yd.

$\frac{2}{4}$  yds.= $\frac{1}{2}$  yd.

Using the yard measure, divide the yard into three parts or feet. Divide the foot and get inches, by counting the divisions in a foot measure. Write the results of the work as follows:

3 ft.=1 yd.

9 in.= $\frac{3}{4}$  yd.

36 in.=1 yd.

12 in.=1 ft.

18 in.= $\frac{1}{2}$  yd.

6 in.= $\frac{1}{4}$  ft.

### Suggestions for Drill in Drawing Lines One Yard in Length.

Using the yard measure, draw a line upon the board one yard in length. Have the pupils look at this, then send them to the board to draw lines of the same length. Direct them to step back far enough to get a correct comparison with the line drawn by the yard measure. Allow them to correct their lines, then take their seats. Call for a decision as to the accuracy of the line drawn by each pupil, comparing each one with the line of the correct length, which still remains upon the board. As the decision is made upon each line, verify by measuring with the yard measure. If the line is too long, mark the correction as follows:



If too short indicate it in this way:



The short vertical line denotes the point to which the line should have been drawn in order to measure one yard.

After erasing very carefully, allow the pupils to try again. Do this for a number of times, then erase the measure and let them draw from memory. Pupils take different places at the board, each time. A little practice will enable them to draw lines of the correct length. Give practice in drawing lines one-half and one-quarter of a yard in length, also one foot, one-half foot, one inch, two inches, etc. Give variety by sending several pupils to draw while others judge of the accuracy of their work.

## MEASURES.

### LIQUID MEASURE.

Pursue the same general plan as in *length*. Show necessity for a standard of measure. Present the gallon as the standard. After gallon, give half gal-

lon, then  $\frac{1}{4}$  gallon. Give term quart, divide into two parts, give term pint, then half pint and gill. Use water for measuring.

<i>Table.</i>	$\frac{2}{3}$ gal.=1 gal.	2 pts.=1 qt.
	4 qts.=1 gal.	4 gi.=1 pt.
	2 qts.= $\frac{1}{2}$ gal.	

#### DRY MEASURE.

The general plan is similar to that for liquid measure. May use salt, sand, bran, sawdust, or any substance most conveniently obtained.

<i>Table.</i>	$\frac{2}{3}$ bu.=bu.	8 qts.=1 pk.
	$\frac{4}{4}$ bu.=1 bu.	4 qts.= $\frac{1}{2}$ pk.
	4 pks.=1 bu.	2 pts.=1 qt.
	$\frac{2}{3}$ pks.=1 pk.	

### WEIGHT.

#### THIRD YEAR WORK.

##### 1. COMPARATIVE WEIGHT.

Provide several objects or parcels of equal weight, others nearly equal, and a few having a marked difference in weight. Direct a pupil to hold out both hands, place a parcel upon each and call upon him to decide which is the heavier. Then change the parcel in the right hand over to the left hand, and again ask for a decision. Call upon more than one pupil to decide upon the comparative weight of the same parcels. When the pupils are able to decide quite accurately, verify by means of the balances; or, if no balances or small scales are at hand, use steelyards.

##### 2. ABSOLUTE, OR STANDARD WEIGHT.

Present the pound as the standard and obtain the table:

16 oz.=1 lb.
8 oz.= $\frac{1}{2}$ lb.
4 oz.= $\frac{1}{4}$ lb.

Give practical application in weighing by playing store, using toy money. This may be obtained from Milton Bradley Co., Springfield, Mass. Salt, sand, beans, peas, bits of stone, wooden cubes, marbles, etc., may be used to represent the various articles sold by weight. Use paper bags, or teach the pupils to make neat parcels. In buying and selling articles, give current prices. While the pupil acting as merchant is weighing the desired commodity, the customer selects from the box the money to be paid and states to the class the sum he intends to give the merchant. Hold the class responsible for a decision upon the correctness of all the work, including accuracy in weighing, making payment and returning change, if more than the exact sum necessary for payment is given. In making change, the merchant mentions the value of the packages, as is done in actual business transactions. e. g. The customer gives the merchant twenty-five cents for a package costing twenty cents. The

merchant, in returning the change, hands over the package, with the change, counting the package twenty cents, and, adding the five cents, making the change and the value of the package equal the twenty-five cents given him by the customer. Continue the work until the pupils become quite expert in weighing and making change.

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## OBJECTS AND QUALITIES.

### SUGGESTIONS FOR LESSONS UPON OBJECTS AND QUALITIES.

The following suggestions deal with miscellaneous lessons and are of use to give variety to school work, to encourage habits of observation to cultivate language and to increase knowledge.

#### PART I.

The object lessons given to young children should be quite simple. If the object is a box, give relative size, as large or small, general shape, color, material, parts and their names and uses, position of parts, corners, edges, how the parts are put together, any peculiarities of construction, as grooves, if the box has a sliding cover, label and its use, etc., and the use for which that particular box is designed. When one box has been described, present another which is different in construction, shape, color, material, or the use for which it is designed, or all of these combined. Then allow pupils to talk about other boxes and their uses. Be watchful of the language employed, substituting correct expressions for whatever may be incorrect, but so quietly and unobtrusively as not to check the interest or enthusiasm of the children.

If the design of the lesson is to get a general idea of objects belonging to a certain class, as, for example, lead pencils, supply each pupil with one of the objects under consideration, and let each examine and state what he finds true of the one he is examining. Give as much of the manufacture as pupils can understand.

#### PART II.

When pupils become older, give lessons upon qualities separately, having before the class several objects possessing the quality to be discovered. After giving several lessons of this kind, give lessons upon objects containing these qualities, and, in addition, lead pupils to discover qualities not previously mentioned. After considering a quality in connection with the objects before the class, require pupils to name objects not present, which possess that quality.

It will be noticed that *particular*, not general statements, are made in connection with these lessons on qualities. The objects possessing these qualities are definitely stated. The names of only a few objects are enumerated, but many others should be given. It is well to have before the class by way of contrast objects not possessing the quality under consideration.



LIST OF QUALITIES UPON WHICH LESSONS MAY BE GIVEN, EITHER SEPARATELY  
OR IN CONNECTION WITH OBJECTS.

*Brittle*.—Because crayon, glass, china, etc., break easily with a snap, they are said to be brittle.

*Tough*.—

*Porous*.—Because bread, sponge, etc., are full of little holes, or pores, they are said to be porous.

*Fibrous*.—Because rope, corn stalks, etc., are made of little threads or fibers, they are said to be fibrous.

*Liquid*.—Because water, milk, etc., can be poured out in drops and conform to the shape of the vessel containing them, they are said to be liquid.

*Solid*.—Because sand, corn, stone, etc., cannot be poured out in drops, they are said to be solid.

*Crumbling*.—Because bread, cake, etc., break easily into little pieces (crumbs), they are said to be crumbling.

*Odorous*.—Because camphor, perfumery, etc., have an odor, they are said to be odorous.

*Inodorous*.—

*Fragrant*.—Because roses, oranges, cinnamon, etc., have a pleasant odor, they are said to be fragrant.

*Acid*.—Because lemon, vinegar, cream of tartar, etc., have a sour taste, they are said to be acid.

*Flexible*.—Because whalebone, etc., bend easily without breaking they are said to be flexible.

*Elastic*.—Because rubber, will bend when pressed, and return to form (or shape) it is said to be elastic.

*Opaque*.—Because milk, stone, wood, etc., can not be seen through, they are said to be opaque.

*Transparent*.—Because glass, water, air, etc., can be plainly seen through, they are said to be transparent.

*Semi-transparent*.

*Sapid*.—Because bread, milk, etc., have a taste, they are said to be sapid.

*Insipid*.—Because water, etc., have little or no taste, they are said to be insipid.

*Palatable*.—Because bread, milk, etc., have a pleasant taste they are said to be palatable.

*Wholesome*.

*Nourishing*.

*Saline*.—Because salt, etc., have a salt taste, they are said to be saline.

*Combustible*.—Because cloth, sponge, wood, etc., will burn, they are said to be combustible.

*Inflammable*.—Because wood, etc., burn with a flame, they are said to be inflammable.

*Durable*.—Because hard wood, iron, etc., will last a long time they are said to be durable.

*Hard*.—Because wood, iron, etc., do not give or yield easily to the touch, they are said to be hard.

*Soft*.—Because wool, sponge, etc., give or yield easily to the touch, they are said to be soft.

*Buoyant*.—Because wood, cork, etc., float upon water they are said to be buoyant. (Also mention buoyancy of objects in air.)

*Absorbent*.—Because bread, sponge, etc., soak up or absorb water, milk, etc., they are said to be absorbent.

*Sparkling*.—Because salt, loaf sugar, etc., shine or sparkle in little points, they are said to be sparkling.

*Granular*.—Because salt, sugar, etc., are made up of little grains, they are said to be granular.

*Vegetable*.—Because trees, grass, etc., grow from the ground they are said to be vegetable.

*Animal*.—Because leather, etc., are obtained from animals, they are said to be animal substances.

*Mineral*.—Because iron, lead, etc., are dug from mines in the ground, they are said to be minerals.

*Natural*.—Because God made trees, grass, etc., they are said to be natural.

*Artificial*.—Because flowers, fruit, etc., are made by man to look like those made by God, they are said to be artificial.

*Useful*.—Because wood, iron, etc., are of use to man, they are said to be useful.

*Adhesive*.—Because gum, sealing wax, (when heated). etc., stick or adhere, they are said to be adhesive.

*Soluble*.—Because sugar, salt, etc., will dissolve in water, they are said to be soluble.

*Caution*.—If substances not soluble in water, but soluble in spirits are mentioned, be sure to name the solvent.

*Insoluble*.—

*Compressible*.—Because bread, sponge, etc., can be made smaller by squeezing or pressing, they are said to be compressible.

*Incompressible*.—

*Preservative*.—Because sugar, salt, saltpeter, etc., will keep or preserve meat, fruit, etc., they are said to be preservative.

*Aromatic*.—Because cinnamon, saffron, etc., have a fragrant odor, and pleasant, spicy taste, they are said to be aromatic.

*Pungent*.—Because pepper, mustard, etc., have a sharp, hot, biting taste, they are said to be pungent.

*Fusible*.—Because wax, lead, etc., will melt, they are said to be fusible.

*Pulverable*.—

*Ductile*.—

*Pliable*.—

*Reflective*.—

*Permeable*.—

*Impermeable*.—

*Medicinal*.—

*Manufactured*.

### Methods of Test and Review.

1. Teacher name the object, pupils give all the qualities that apply.
2. Teacher name qualities, pupils name the object possessing those qualities.
3. To test for some particular quality. *a.* Teacher name the quality, pupils name the objects possessing that quality. *b.* Some pupil name a quality, other pupils name objects possessing that quality.

4. The teacher may have, concealed from view, some object with which pupils are familiar, but upon which no lesson has been given. The teacher may name the qualities possessed by that object, and the pupils decide upon the object from the qualities named. e. g. The teacher has an orange and says, "This object is spherical, odorous, somewhat rough, sapid, juicy, palatable, wholesome, useful, vegetable, etc., naming whatever other qualities may be necessary to a clear conception of the object, placing color last, in this case. Pause slightly after each word, giving the pupils an opportunity to mention whatever object is suggested by the quality named. Give parts also, if necessary, not naming so rapidly that the pupils will be unable to gain a clear concept of the object described.

5. Composition lessons may also be given as reviews.

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### Suggestions for a Lesson on Bread.

1. Qualities.

Bread is white, soft, porous, opaque, odorous, crumbling, solid, adhesive, (when wet), compressible, palatable, wholesome, nourishing, fermented, useful, etc. etc.

- II. How qualities are discovered.

1. By sense of sight we know bread is white, porous, opaque.
2. By sense of smell we know bread is odorous.
3. By sense of touch we know bread is soft, adhesive, solid.
4. By sense of taste we know bread is palatable.
5. By experiment we know bread is compressible, absorbent, crumbling.
6. From previous knowledge we know bread is wholesome, nourishing, fermented, vegetable, useful.

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### Suggestions for Review Lesson.

Examination of cork and sponge. Resemblances and differences noted. Only a part of the work is given under each head, as this is intended to be suggestive only.

- I.—Resemblances.

1. Qualities: Both are light, porous, elastic, compressible, opaque, tough, natural, brown, combustible, etc.

2. Qualities depending upon each other.

*a.* Both are useful, because elastic, light, tough, compressible, etc., etc.

*b.* Both are compressible, because porous, etc.

Similar for other qualities.

## II.—Differences.

## 1. Qualities.

- a.* Sponge is absorbent, soft, animal, etc.
- b.* Cork is impervious, hard, vegetable, buoyant, etc.

## 2. Qualities depending upon each other.

- a.* Sponge is absorbent, because the pores are connected.
- b.* Cork is impervious, because the pores are not connected.

Similar for others.

## III.—Uses.

- a.* Sponge is used for washing, binding on wounds, etc., etc.
- b.* Cork is used for stoppers to bottles, soles of boots, artificial limbs, life boats, life preservers, etc.

Qualities upon which uses depend.

- a.* Sponge is used for washing, because soft, elastic, tough, porous, compressible, absorbent, durable, etc.

Similar for other uses.

Give additional statements if desirable.

### Additional Suggestions for Lessons on Manufactured Articles.

1. Of what substances made?
  2. Why are these substances used?
  3. Could any other substances be used?
  4. For what purpose made?
  5. Where made?
- As far as practicable, state the process of manufacture.

## FORM.

### FIRST AND SECOND YEARS.

PART I—Apparatus: Box of forms.

Get ideas of surface, then apply to a description of the solids, cube, oblong (square prism), sphere, hemisphere, cylinder, cone and pyramid.

I.—Present a solid, (the cube is good) and get an idea of surface. Apply to other solids. Obtain the following:

1. The outside of this block is called its surface.
2. A rounded surface is called a curved surface.
3. A flat surface is called a plane surface.
4. Parts of the surface are called faces.
  - a.* A flat face is called a plane face.
  - b.* A rounded face is called a curved face.
5. The meeting of two faces forms an edge.
  - a.* The meeting of two plane faces forms a straight edge.
  - b.* The meeting of a plane face and a curved face forms a curved edge.
6. The meeting of edges forms a corner. Or, the place where edges meet is called a corner.

7. The picture of an edge is called a line.

a. The picture of a straight edge is called a straight line.

b. The picture of a curved edge is called a curved line.

NOTE. As each one of the above is obtained, apply to other objects than the one in hand; objects in the room, on the street, at home.

II.—Apply the ideas and terms obtained to a description of the solids named above as follows:

*Cube*.—This block has six plane faces, twelve straight edges, and eight corners. The faces are all of the same size. This block is called a cube.

*Oblong*.—This block has six plane faces, twelve straight edges and eight corners. Four of the faces are longer than the other two. This block is called an oblong.

*Sphere*.—This block has one equally curved face. This block is called a sphere.

*Hemisphere*.—This block has one curved face, one plane face and one curved edge, and is called a hemisphere.

*Cylinder*.—This block has one curved face, two plane faces and two curved edges, and is called a cylinder.

*Cone*.—This block has one curved face, one plane face and one curved edge. The curved face ends in (or tapers to) a point. This block is called a cone.

*Pyramid*.—This block has four, (five, six, or whatever the number may be) plane faces, eight straight edges, and four corners. Four of the edges meet in a point. This block is called a pyramid.

NOTE. As soon as any of the above descriptions are obtained, and terms given, apply to all the objects the children can see, and have them observe objects, at home or on the street, to which the description would apply.

Review line, then give:

*Vertical Line*.—A line drawn up and down, but neither to the right nor left, is called a vertical line.

*Horizontal Line*.—A line drawn to the right and left, but neither up nor down, is called a horizontal line.

*Oblique*.—A straight line that is neither vertical nor horizontal, is called an oblique line.

*Parallel Lines*.—Lines the same distance apart all their length are called parallel lines. Or this: Lines extending in the same direction and the same distance apart all their length are called parallel lines. The latter definition will be found the better preparation for what follows.

## PART II.

### FIFTH YEAR.

First Review parallel lines, then proceed to angle.

*Angle*.—The difference of direction of two lines is called an angle. (These lines would meet if extended.)

NOTE. 1. The point of this lesson is *difference of direction*. The meeting or not meeting of the lines is of minor importance. If the work is well done, children will generally find this out for themselves.

NOTE. 2. Before teaching right angle the children must be given the idea of perpendicular lines. Their idea of lines perpendicular to each other is that they form a square corner or corners at the point of meeting. Teach that lines so meeting, or so extending that would meet if continued, are perpendicular to each other. They are now ready for a definition of right angle.

*Right Angle*.—The difference of direction of two lines perpendicular to each other is called a right angle.

*Acute Angle*.—An angle smaller (or less) than a right angle is called an acute angle.

*Obtuse Angle*.—An angle greater than a right angle is called an obtuse angle.

*Figure*.—A picture of the face of a block is called a figure.

*Triangle*.—A figure having three sides and three angles is called a triangle.

*Right-Angled Triangle*.—A triangle having one right angle is called a right-angled triangle.

*Acute-Angled Triangle*.—A triangle having three acute angles is called an acute-angled triangle.

*Obtuse-Angled Triangle*.—A triangle having one obtuse angle is called an obtuse-angled triangle.

NOTE. If it seems desirable, equilateral, scalene and isosceles triangles may now be given, but it is generally better to leave them till the classification of plane figures is reached.

### Four-Sided Figures or Quadrilaterals.

*Square*.—A four-sided figure having four right angles, and all the sides equal, is called a square.

*Oblong*.—A four sided figure having four right angles, and two sides longer than the other two, is called an oblong.

*Rhomb*.—A four sided figure having two opposite acute and two opposite obtuse angles, and all the sides equal, is called a rhomb.

*Rhomboid*.—A four sided figure having two opposite acute and two opposite obtuse angles, and two of its opposite parallel sides longer than the other two, is called a rhomboid.

*Parallelogram*.—A four sided figure having its opposite sides parallel, is called a parallelogram.

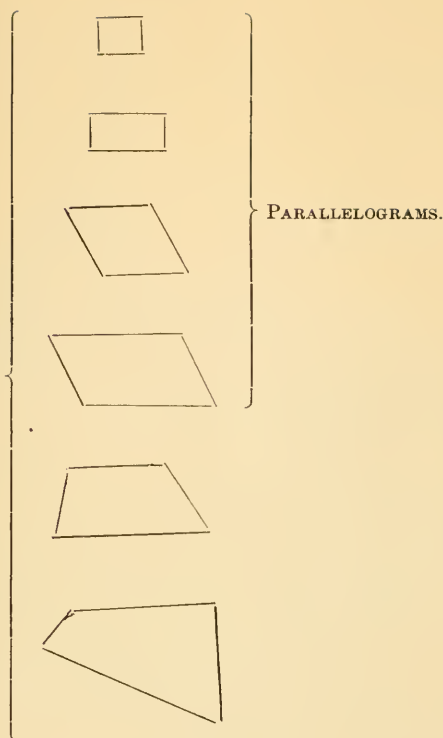
*Trapezoid*.—A four-sided figure having only two of its sides parallel, is called a trapezoid.

*Trapezium*.—A four-sided figure having none of its sides parallel is called a trapezium.

NOTE. As soon as the term *parallelogram* is given, apply it to the square, oblong, rhomb and rhomboid. After giving trapezoid and trapezium, lead the pupils to see that while all are not parallelograms, all are alike in having four sides, therefore they can be distinguished by one term—quadrilaterals. For convenience the following form may be used :



FOUR-SIDED FIGURES  
OR  
QUADRILATERALS.



*Pentagon.*—A figure having five sides is called a pentagon.

*Hexagon.*—A figure having six sides is called a hexagon.

*Heptagon.*—A figure having seven sides is called a heptagon.

*Octagon.*—A figure having eight sides is called an octagon.

*Nonagon.*—A figure having nine sides is called a nonagon.

*Decagon.*—A figure having ten sides is called a decagon.

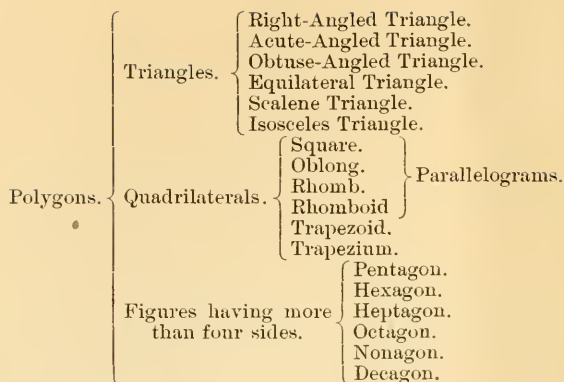
Now classify as polygons all the plane figures given.

*Polygon.*—A figure having three or more sides is called a polygon.

The following will be found a convenient form :

### Classification of Polygons.

NOTE. In the review of triangles previous to classification, equilateral, scalene and isosceles triangles may be added to those already given, should the teacher desire to do so.

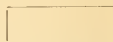


In placing the classification upon the board, have the children represent the figure after each name, e. g.

square,



oblong,



or, the figure may be substituted for the name, as in the classification of quadrilaterals.

*Circle*.—A surface bounded by a curved line, every point of which is equally distant from the center, is called a circle.

*Circumference*.—The line which bounds a circle, is called its circumference.

*Diameter*.—A straight line passing through the center of a circle and dividing it into two equal parts, is called its diameter.

Should the teacher so desire, the term radius may be given in a similar manner. May also talk about ellipse.

Much practice should be given in representing all the plane figures.

### Solids.

*Solid*.—Because this block has length, breadth and thickness it is called a solid. May generalize, and say, *anything* that has length, breadth and thickness, is called a solid.

*Base*.—The face upon which a solid rests is called its base.

Have pupils see that the ends of these solids are called bases.

### Classes of Solids.

Prism, Cylinder, Cone, Pyramid, Sphere.

*Prism*.—A solid having polygons for its bases and parallelograms for its faces, is called a prism.

NOTE. Present different prisms, describe each, finding one has a triangle, another a square or an octagon, etc., for a base, and each has parallelograms for faces, leading pupils to call them triangular, square, etc., prisms.



*Cylinder*.—A solid having two circular ends which are parallel and equal, and a curved face between, is called a cylinder.

*Cone*.—A solid having a circular plane base and a curved face which ends in (or tapers to) a point, is called a cone.

*Pyramid*.—A solid having a polygon for its base, and as many triangular faces meeting in a point as there are sides in the base, is called a pyramid.

*Sphere*.—A solid having a curved surface, every point of which is equally distant from the center, is called a sphere.

## COLOR.

### PART I.—First Year.

APPARATUS.—Color Chart, colored papers, cards, cubes, splints, wools (zephyr) colored beads (made of wood). The papers, cubes, splints and beads are inexpensive and may be obtained by sending to Milton Bradley Co., Springfield, Mass. If a regular color chart can not be obtained, one can be made with a sheet of white cardboard and the colored papers. Place the colored papers at a little distance from each other. Arrange the primary, secondary and complementary colors in groups. It is not necessary to teach the terms primary and secondary, but teach the harmony of the primary and secondary colors, or, in the children's own language, "what colors look pretty together." Colored papers and squares of cardboard with the aid of a little mucilage, will make colored cards to correspond with the chart. Have, in wools, several skeins each, of the primary and secondary colors. It is convenient to have a little of each color wound upon a piece of cardboard.

Teach the children to match, distinguish and name red, yellow, blue, orange, violet, green, brown and gray. Begin with the colored papers or cards. Distribute these, giving several to each one. Select one of the brightest colors, red, for instance, hold it up before the class and ask each to select one of the same color, *not naming the color*. Hold the card in as good a light as possible. If any child fails to find a card like it in color, place the card upon the desk or table before him. The difficulty may be with the difference in the light upon the cards, or, perhaps, in some defect of vision. After selecting all the cards of that color, have them find the same color upon the chart, holding the card beside the same color upon the chart, for the decision of the class upon its correctness. Proceed with the remaining colors in a similar manner. Use the colored cubes for variety, directing the children to select all the cubes of each color, placing each group by itself. When the pupils can match the colors readily, the names may be used in connection with the colors. The wooden beads consist of cubes, spheres and cylinders of the various colors and are to be strung upon shoe-laces. Give the direction for selecting and holding up a cube, sphere or cylinder of a certain color, then place all beads of that color upon the string, and so on. In using the colored splints, each child may

select the color he prefers to use and make with them some design upon the table or desk before him. Many other ways of giving variety will suggest themselves.

If there is a confusion of the colors with some pupil, which does not disappear with the experience in matching colors, arrange the wools and give further test. This difficulty is permanent with only a very few.

*PART II.—Third or Fourth Year.*

Very few will be able to obtain the apparatus for performing experiments with rays of light, discovering and combining what some scientists consider the true primaries—red, green and violet. For a scientific discussion of this subject, see *Students Text-Book of Color*, by Ogden N. Rood, published by D. Appleton & Co., New York. Chevreul on Color contains valuable information on work with pigments.

Red, yellow and blue produce the other colors; therefore, for the purpose of these lessons, they will be considered primary colors. Show how the secondaries are formed from the primaries by mixing paints before the class. Teach that each color has a standard and that it also has tints and shades. Give the name of the standard, lightest tint and darkest shade of each. Teach how tints and shades are made from the standard, using paints or colored ink. Also teach how hues are produced. The apparatus for this work consists of tube paints, oil, knife and white plates or earthen palette. Thin with oil and spread thinly and evenly. Colored inks are sometimes used, in which case small glasses will be necessary. Make tints by mixing milk with the ink. Water-colors may also be used. With pigments, use as standards crimson lake, chrome yellow and prussian blue. Colors are classed as primary, secondary and tertiary.

Primary colors are those which, mixed, will produce other colors, but are not themselves formed from other colors.

Secondary colors are those which are produced by mixing two primaries.

Tertiary colors are produced by the mixture of three primaries or of a primary and secondary color.

A standard of a color is the type of that color.

A shade of a color is darker than the standard of that color. Shades are made by mixing black with the standard, except in the case of yellow and orange with which brown must be used.

A tint of a color is lighter than the standard of that color. Tints are made by mixing white with the standard.

The hue is the characteristic which distinguishes one color from another. There are three colors one or all of which run through all tints and shades and either two or all three of these colors must be used in all combinations of color. The commingling of these colors gives hues. Tone is the position any color or hue has in a scale from white to black. We may say a purplish hue of a light or dark tone.

Use the wools for selecting standards. If the color before the class is red,

ask some pupil to arrange the wools, then select all the dark red, placing it by itself, and put all the light red in another place. This leaves a red that is neither dark nor light, or the reddest red, which is the standard red. Explain the use of the term *standard*, if it is not already familiar to the pupils. Next select the tints and shades, pupils defining each. Produce the tints and shades with the paints, the pupils carefully noting each step of the work, and summing up the result as follows: Tints of red are made by mixing white with the standard red. Shades of red are made by mixing black with the standard red. Similar for other colors, except shades of yellow and orange, for which use brown.

With the paints, produce several hues, the pupils stating the result of each experiment.

Now produce the secondaries from the primaries, the pupils stating the result each time, e. g., Yellow and blue make green, etc.

Teach the use of the terms primary and secondary, and apply to their respective colors.

Produce the tertiaries, the pupils giving the result of each mixture, e. g. Green and violet make olive. Green and orange make citrine. Violet and orange make russet. It is generally necessary to add a little black to make the tertiaries. Teach the term *tertiary*, applying it to the proper colors.

Drill and Test—Have the pupil select all the colors, including tints, shades and hues, from worsteds furnished for that purpose, also bring to the class such colored objects as they can procure, verifying by means of the worsteds or paints. Name a secondary color, pupils name the primaries that produce it; name two primary colors, pupils state the secondary they would produce; select a color, pupils state whether primary, secondary or tertiary, giving the reason. Use any other means of testing that may suggest itself at the time.

Group colors under their respective standards, giving the names of several tints and shades.

The following may be found useful:

<i>Standards.</i>	<i>Lightest Tints.</i>	<i>Darkest Shade.</i>
Red—Carmine.	Flesh Color.	Crimson.
Blue—Ultramarine.	Pale Blue.	Indigo.
Yellow—Chrome Yellow.	Straw-Color.	Saffron.
Green—Emerald.	Pea-Green.	Invisible Green.
Orange—Orange.	Cream-Color.	Sorrel.
Violet—Violet.	Mauve.	Plum.
Brown—Chocolate.	Russet.	Umber.
Gray—Normal Gray.	Pearl Gray.	

### Classification of Some of the Common Colors.

<i>Red.</i>	<i>Yellow.</i>	<i>Blue.</i>	<i>Orange.</i>
Carmine.	Chrome Yellow.	Ultramarine.	Orange.
Scarlet.	Saffron.	Indigo.	Cream-Color.
Vermilion.	Sulphur.	Prussian Blue.	Sorrel.
Crimson.	Canary.	Cobalt Blue.	Buff.
Cherry.	Straw-Color.	Turquoise.	Salmon.
Magenta.	Primrose.	Azure.	Corn-Color.
Garnet.	Lemon.	Pale Blue.	
Rose-Color.	Ochre.		
Pink.	Citrine.		
Flesh-Color.	Golden.		
<i>Green.</i>	<i>Violet.</i>	<i>Brown.</i>	<i>Gray.</i>
Emerald Green.	Violet.	Chocolate.	Normal Gray.
Invisible Green.	Purple.	Russet.	Pearl Gray.
Pea Green.	Mauve.	Dark brown(Umber)	Steel Gray.
Tea-Green.	Plum.	Chestnut.	Iron Gray.
Sea Green.	Lilac.	Anburn.	French Gray.
Olive.	Lavender.	Hazel.	Slate.
Grass-Green.	Amaranth.	Snuff.	Ash Gray.
Beryl.		Tan-Color.	Ashes of Roses.
		Mulberry.	

### Harmony of Color.

Begin with the harmony of a primary with a secondary, giving first the harmony of each primary with its complementary secondary. These are the most striking, and show most clearly the idea that all the primary colors must be present when there is a harmony; e. g., blue and orange harmonize because orange is made of yellow and red. Also show that blue and green do not harmonize, because red is wanting, etc. Next take the harmony of secondaries, with secondaries tracing the presence of the three primary colors. After this follow harmony of tertiaries with primaries, of tertiaries with secondaries, and of tertiaries with tertiaries. It adds greatly to the interest of this part of the work, to have colored blocks, or colored papers cut into suitable shapes for patterning. Triangular forms and squares are the most suitable for this purpose.

### ETHICAL INSTRUCTION.

"Ethical training in public schools, from the nature of the case, must be largely incidental, but the spirit of true ethics should pervade every exercise. The school training should develop clear perceptions of right and wrong, love of truth and justice, cheerful obedience to law, respect for the rights of others, and honest desire to learn duty and to discharge it with fidelity.—Art of School Management. *Baldwin.*

The standard of right is intellectual and may be taught like other intellectual truth, but moral tone—what is popularly meant by morals, is emotional, hence can not be inculcated in the same way or by the same agency as intellectual truth. Moral activity in children is largely imitative, hence "Morals" must be taught by example rather than by precept.

While ethical instruction finds no place in the program, the daily occurrences of the schoolroom and playground afford opportunities for the enforcement of moral truths. Training children in habits of personal neatness, proper care of books and desks and the practice of little courtesies, tends to increase their self-respect. The example of the teacher, in this direction, is more powerful than all the other influences that can be brought to bear. The neat and attractive appearance of the school-room, with whatever of adornment can be obtained in the way of pictures, plants, flowers, etc., render the children more susceptible to moral influence. Pleasant surroundings tend to open the heart to good impressions.

Whatever evils may be observed either in the schoolroom or on the playground should receive careful attention. Distinguish between intentional and accidental or unintentional wrong doing. The spirit of fun and frolic so natural to childhood should be allowed proper exercise within lawful bounds; and the teacher who can sympathize with and enjoy the happiness of children in the rational exercise of this spirit will be in a position to exert a strong influence toward banishing from the playground selfishness and unkindness and promoting a spirit of harmony and good-will.

Teach the children to be kind and helpful toward any of their companions who through weakness or misfortune are physically unable to enter into their active sports, also to care for and protect those younger than themselves.

Call attention to the lives of those who are respected and honored and impress the idea that every temptation to wrong doing successfully resisted is a gain toward the attainment of a true and worthy manhood and womanhood. While appreciating every attempt to reach a higher standard, have patience with failures. It is not well to refer too frequently to the wrong doings of children, or to be continually reproving them, for whatever is kept constantly before the mind makes the most durable impression. When it becomes necessary to reprove, let it be done in such a manner as to bring conviction of the wrong, but let it not be in a fault-finding way. Then immediately resume the interrupted work and with it the ordinary manner. Constant "nagging" arouses in children an almost irresistible desire to repeat a wrong act or to invent new means of giving annoyance.

Cultivate a spirit of loyalty to the school. Impress each pupil with a sense of personal responsibility for the character of the school. Its interests are their interests, its reputation is in their hands, for they *are* the school.

Sometimes a story, bright and to the point, will aid in enforcing a moral truth or correcting an evil. It is not always necessary to call for or point out the moral of a story read or related for such a purpose. If the story is to the point, the moral will be obvious and may safely be left to take care of itself. Read nothing to children that does not tend to elevate the moral tone by placing before the pupils higher standards of right. The duty of the teacher as to the child as a whole, to teach and train the whole child for the relations and responsibilities of life, in the present and in the future.







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